Ferritin as a tool in identifying endocrinopathies in thalassemia

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World thalassemia day is celebrated every year on May 8 to raise the public awareness of the disease. Endocrine abnormalities are among the most common complications of β-thalassemia major. The metabolically active iron gets deposited in endocrine organs. Timely iron chelation can reduce hyperferritinemia, hence, ameliorating the endocrinopathies. The May 2019 issue of Indian Journal of Child Health is publishing an article by Kataki and Bharati, where authors have described the influence of ferritin levels in early detection of endocrinopathies among 70 such children aged 5–18 years hailing from Northeast India [1]. Existing literature have stressed on judicious blood transfusions and serial ferritin measurement in recognizing endocrine complications [2]. Pituitary damage due to iron overload is the underlying pathogenetic factor in hypogonadism and partly contributes to poor growth [3]. Puberty is the stage of the maximal growth insult. The current practice is to begin iron chelation therapy when the serum ferritin levels reach 1000 ng/ml or when child reaches 3 years of age or has received about 10–20 transfusions [2].

The strength of this article is the adaptation to the resource-limited settings. Simple physical parameters such as height and sexual maturity rating were used alongside measurement of serum ferritin, calcium, alkaline phosphatase, phosphate, thyroid-stimulating hormone, RBS, and fasting blood sugar. However, more workup is required to timely recognize hypogonadism. Additional assessment of free T4 levels, gonadotropins (luteinizing hormone and follicle-stimulating hormone), and bone age (X-ray of wrist and hand) is needed in the ideal scenario as per the international network on endocrine complications in thalassemia (I-CET) position statement and guideline [4].

It is worthwhile to note that through this article, authors have made a valiant effort on measuring ferritin levels which help in early control of endocrinopathies in thalassemia. Hypocalcemia, due to hypoparathyroidism, is a recognized late complication of iron overload and/or anemia. Hence, optimal age of screening should begin from the age of 16 years [5]. In cases with low serum calcium and high phosphate levels, parathyroid hormone and 1, 25-dihydroxycholecalciferol (Vitamin D) should also be evaluated. Impaired glucose tolerance and diabetes mellitus may be the consequence of β-cell destruction secondary to iron overload and chronic liver disease.

Future research should be done utilizing the thalassemia registry across the focused clinics across India, so as to capture the entire spectrum of hormonal problems. Specific imaging of pituitary and gonads also needed in quantifying iron toxicity.

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